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Psychosis as a continuous phenotype in the general population: The thin line between normality and pathology

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Van Os and Reininghaus provide a compelling overview of evidence suggesting that psychosis may be perceived as an extreme expression of continuously distributed quantitative traits in the general population, where minor psychotic symptoms, similar but less severe than those observed in affected individuals can be found in proportions of up to 7%.

The concept of the extended psychosis phenotype offers a number of unique opportunities. Firstly, recognising the psychosis phenotype as a gradual infusion of quantitative traits into clinical syndromes provides an elegant explanation for variation in the degree of severity of psychosis-like experiences. Secondly, as highlighted by the authors, the extended psychosis phenotype is transdiagnostic in nature, implying that it is not restricted to any specific psychotic disorder but rather represents a continuous expression across the psychosis spectrum. This may explain the overlap in psychopathological presentation observed across mental disorders and therefore provides a foundation for cross-disorder analyses. The latter in turn would tackle the indistinctness of current diagnostic categories that are marked by lack of clear boundaries between themselves and with normality (1). While considering psychopathology in terms of a transdiagnostic psychosis dimension with five specific constructs may still be perceived as agnostic with respect to traditional diagnostic systems, using these two approaches in combination may allow for a more accurate classification of affected individuals. The transdiagnostic approach may also have important advantages for scientific research. In research carried out by our group employing the transdiagnostic psychosis dimension, a degree of specificity was found in the relationships between different types of childhood trauma and psychosis symptom dimensions in adulthood suggesting that distinct pathways may be involved in the relationship between the childhood trauma and psychosis (2). Eventually, these findings might feed into interventions targeting high-risk children. Similarly, Jones et al (3) have demonstrated the importance of the transdiagnostic psychosis dimension in exploring how an increased genetic risk for schizophrenia expresses during early teens among the general public. Certainly, building on these findings, future

studies may shed some light on the pathways between the genetic liability for schizophrenia and phenotypical expression of this illness in childhood, adolescence and throughout adulthood.

It is asserted that 20% of those who report subclinical psychotic symptoms make the transition to persistent psychosis. If these estimates are accurate, then detecting individuals with subclinical psychotic experiences from the general public would offer a unique opportunity to reduce the duration of untreated psychosis (DUP), and in turn, improve treatment response, risk for relapse and overall prognosis (4). It would also enable early interventions ultimately resulting in diminishing symptom severity from the onset; deferring or preventing the onset of psychosis and reducing the financial or emotional liabilities associated with the lifetime burden of the illness.

Are these estimates accurate? Identification of individuals with subclinical psychotic experiences is reliant on help-seeking behaviour. However, young individuals with an early onset of psychosis are less likely to engage in such behaviours (5). The likelihood of help-seeking is dependent on the awareness and insight of the earliest manifestations of psychotic symptoms, and even more so on availability of supportive families and strong social networks around at-risk young individuals (5). Another factor arising from the calculation of so-called transition rates is the drawing of distinctions between the definition of psychotic symptoms (marking the onset of the period of untreated psychosis) and the onset of psychotic disorder. The claim that early intervention services reduce the DUP in comparison to generic clinical services (6) is critically dependent on whether the time between the earliest report of symptoms and the intervention of early intervention services is taken as the DUP or, whether the beginning of DUP is ‘reset’ after such an intervention unless and until the individual is in the unlucky minority and subsequently develops their first episode of full-blown psychosis. Furthermore, preliminary work from our clinic suggests that when we look back on the journey that first episode psychosis patients took before arriving at such generic catchment area clinical services we find that as a proportion, there are very

few who come via prodromal services suggesting that the scope for reducing or postposing the onset of psychosis is limited. Some people have an onset that is too rapid and severe while others are so insidious that they escape the notice even of services whose philosophy is not at all tied to diagnostic categories and who embrace the dimensional approach (7). Finally, it has also been argued that subclinical psychotic experiences are more likely to occur in adolescence - the phase in young people's lives that is frequently marked by experimenting with substances or rebellious behaviour (1). This issue is exacerbated by differing approaches used to elicit psychotic experiences some of which exclude clinical judgement and others which seem to lead the respondent into endorsing such experiences (see(8) for discussion). These methodological issues probably contribute to the wide range of estimates of psychotic experiences in the general population.

Evidence suggests that neurocognitive alterations, dysregulation in top-down processing and reasoning biases may be particularly relevant to the development of psychotic experiences even in non-help seeking populations, and sophisticated imaging analysis techniques may be used to uncover them (9). These may yet serve as important markers for illness onset. However, it is too early to say how specific these sorts of findings are to psychotic spectrum disorders and to what extent they apply to other mental disorders. Certainly, the evidence, based on family studies suggests that subclinical psychotic experiences are influenced by genetic risk factors. In theory this may offer a unique prospect to develop a screening test based on genetic composition. Indeed, similarly to the asserted nature of the extended psychosis phenotype, the genetic risk for psychosis is distributed on a continuum at the highest end of which are affected individuals followed by their healthy relatives (10). Although, these results support the premise of being able to detect those at risk based on their genetic make-up, recent attempts of linking genetic risk score for schizophrenia to an intermediate phenotype in non-clinical populations have so far been contradictory (11).

The importance of the transdiagnostic and extended psychosis phenotype in relation to diagnosis, aetiology, prevalence and outlining the future direction for research are indeed

noteworthy. However, without a clearly established and scientifically validated threshold defining pathology as well as markers indicative of susceptibility to the illness, the borderline between normality and psychopathology will remain contested.

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